

Remarks/Arguments

Reconsideration of this application, as amended, is respectfully requested.

The specification has been amended so as to correct obvious errors and/or to improve the definiteness or readability. Specifically, paragraph [0020] has been amended at line 4 by changing "18" to --18R--, with it being noted that reference numeral 18R designates the right hand wheel of the loader 10 illustrated in FIG. 1. Concerning paragraph [0027], line 7 has been amended by changing "right" to --left--, it being noted that the vertical axis Y' shown in FIG. 2 is leftward, as considered relative to the forward direction of travel of the loader 10, of the center point between the rows 94 and 96. Concerning paragraph [0032], in line 1, "C2" has been changed to --C3--, with it being noted that C3 appears in FIG. 3 which is being described here. Concerning paragraph [0033], in line 2, the preposition "to" has been changed to --for-- since the latter is more apt in the context, and in line 4, "latter" has been changed to --tines-- in order to make it more definite as to the structure intended. Finally, as concerns paragraph [0035], line 7, the phrase --, when the boom section 50' is at its fully raised position, shown in FIG. 3,-- has been inserted since the sentence is otherwise incomplete and thus indefinite.

Claims 1 - 15 are pending in this application, with the Examiner noting that claims 2, 3, 6, 7 and 10-12 contain allowable subject matter.

Claims 1, 8, 9, and 13-15 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for the reason that the Examiner considers each of claims 1 and 8 to be incomplete for failure to include the angled boom section at the bottom of applicant's boom, with the Examiner contending that this structure is required for "the mounting of the boom first end on the opposite side of a post braced at the top from the second end of the boom"; and the Examiner considers each of claims 14 and 15 to be incomplete since "they define the structure in terms of moment arms, i.e., desired results, instead of the structure which provides the results". It is respectfully submitted that the rejection of claims 1 and 8 is in error and that claims 14 and 15 have been amended in a manner thought to overcome the rejection.

As concerns claims 1 and 8, applicant does not concur in the Examiner's contention that the only inner boom section that is capable of having its lower end

coupled to the opposite side of the axis Y relative to the coupling of its other end to the outer boom section is an inner boom section having the specific shape of applicant's inner boom section 50', which is the preferred embodiment but not the only configuration that would be operational. For example, one possible construction would merely require that the bracket 48' be placed in a lower position than that illustrated, and that the inner boom section 50' be reconfigured inner boom section to extend straight between the coupling of its upper end with the outer boom section 60 and the coupling of its lower end with the swivel mast 36', with it being noted that this reconfigured boom inner boom section would not have a bifurcated lower end but would have a lower end portion located entirely forward of, and in overlapping relationship to the mast pivot post support member 44. In view of the possibility of other boom configurations that will work while not including the angled lower end portion disclosed, applicant requests that this rejection of claims 1 and 8 be withdrawn. Claims 2 and 3 respectively depend directly and indirectly from claim 1 and are likewise thought allowable; and since claims 9 - 13 depend either directly or indirectly from claim 8, they too are thought allowable.

The rejection of claims 14 and 15 is now thought overcome because, as now presented, structure is set forth not just a desired function.

As to claim 14, it is noted that, among other structure, applicant requires an inner boom section to be mounted to a swivel mast **at a first location**, a hydraulic lift actuator to be coupled between **a second location** of the swivel mast and the inner boom section, and for **said first location to be so located relative to said boom lift actuator that a first moment arm between a first line of action of said boom lift actuator and said first location** when said inner boom section is in said fully lowered position is no greater than a second moment arm **between a second line of action of said boom lift actuator and said first location**, when said inner boom section is in said fully raised position. Thus, the recited location of the line of action of the boom lift actuator relative to the location of the coupling of the inner boom section to the swivel mast results in the establishment of the claimed moment arms.

Claim 15 is similar to claim 14 but requires the line of action of the boom lift actuator at any point between the fully lowered and raised positions of the inner boom section to be substantially the same distance from the first location so that the moment arm is substantially the same for any point between the fully lowered and

raised positions of the inner boom section.

Claims 4 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art structure depicted in FIG. 1 of the application, in view of Stenudd. It is respectfully submitted that this rejection is in error.

Claim 4 has been amended to make it clear that the straight portion of the inner boom section **is embodied in the inner boom section between its lower and upper ends** and is not connected directly to the swivel mast, and to require the boom lift actuator to be coupled to the inner boom section **at a location approximately at an upper end of the straight portion**. This straight portion is required to be in approximate parallel relationship to the vertical axis of the swivel mast when the inner boom section is in its raised position. As is clear from FIG. 1 of applicant's drawings, the boom 50 is far from extending parallel to the axis Y.

The Examiner relies on Stenudd to provide a teaching for modifying the structure of FIG. 1 to provide the required parallel relationship defined in claim 4. Stenudd discloses a device 1 for handling hospital beds, which includes a pair of parallel rails 4, each being supported at opposite ends by a caster-mounted wheel 2. A scissors linkage couples first ends of the rails 4 together so as to permit the device 1 to be collapsed. Triangular, upright plates 5 have respective first edges fixed to first end portions of the rails 4. A pair of arms 7 are respectively disposed vertically above the rails 4 and have first ends respectively pivotally mounted to top corners of the plates 5 for movement between horizontal and vertical positions. The arms 7 each include a back turned end portion 11 which extends beyond the pivot connection. An extensible and retractable actuator 14 is coupled between a given plate 5 and an end of the back turned end portion of the associated arm 7 and is operative for moving the arm 7 between its horizontal and vertical positions, with the back turned end portions being adapted for engaging one side of a bed frame while an attachment 8 at the other end of the arm 7 is provided for engaging an opposite side of the bed frame. Thus, with the opposite sides of a bed frame engaged in the end portions 11 and attachments 8 of the arms 7, extension of the actuators 14 will result in the bed being tilted on its side.

The Examiner has taken the position that it "would have been obvious enhance the bifurcated end of the first boom in figure 1 to enhance the pivot range in view of the teaching in Stenudd (figure 3)". It is respectfully submitted that one

skilled in the art would not have looked to the bed handling art for teachings to be applied to a boom used in the sugar cane loader art to which the claimed invention pertains. Furthermore, as now amended, claim 4 requires the straight portion to be embodied in the inner boom section between the lower and upper ends of the boom section and for the boom lift actuator to be connected to the inner boom section at a location approximately at an upper end of the straight portion, and neither applicant's FIG. 1 nor Stenudd disclose such a straight portion. Thus, claim 4, and claim 5/4 are thought allowable. Since claims 6 and 7 respectively depend from claim 4 and claim 5, they are likewise thought allowable

Claims 14 and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's prior art figure 1 in view of Ohman, with the Examiner considering that it would have been "an obvious matter of design to substitute a post and boom as used in Ohman for that in figure 1". It is respectfully submitted that, as now presented, claims 14 and 15 each define subject matter which is patentable over this combination of references. Specifically , it is noted that the structure depicted in applicant's FIG. 1 does not have first and second ends of the inner boom section 50 located at opposite sides of the axis Y, as claimed. Further, it is noted that the inner boom section 50 does not include a straight portion which is approximately vertical when the inner boom section is in its fully raised position illustrated in FIG. 1. While Ohman does disclose an inner boom section 6 having first and second ends located on opposite sides of the axis about which the swivel mast 3 pivots, the mast and mast support structure of Ohman is one where the vertical post 1 is tubular and supported only at its bottom with the swivel mast 3 being joined to a shaft 2 that is received for pivoting within the post 1. Thus, the structure of Ohman is similar to the structure of the CAMECO, SP-3000 cane loader cited by the applicant as being prior art. Because the posts of these structures are free standing, i.e., not supported at their tops, they must be quite robust and are normally located in the middle of the tractor instead of at the side, as required by the claims. No where in Ohman is there a suggestion as to how the feature of having the opposite ends of the inner boom section located on opposite sides of the swivel axis would be achieved in a structure where the swivel mast is mounted so as to rotate about the support post below a supported upper end of the post. In addition, Ohman does not show a structure capable of positioning a major straight portion of

the inner boom section in a near vertical fully raised position as claimed. If Ohman is modified so as to perform such a function, as suggested by the Examiner, then the advantage of not having any increase in the moment arm between the pivot 4 and the line of action of the cylinder 9, as the boom section 6 is moved from its fully lowered position to its fully raised position, is lost.

For the reasons stated above, it is not seen how any teaching of Ohman would have made obvious the claimed structure which requires the swivel mast to be located below a supported upper end of the swivel mast support post and for the inner boom section to be mounted such a first end is on one side of the axis of the swivel mast support post and a second end is located on the other side of the axis of the swivel mast support post, and in addition have the boom lift actuator to be located relative to the coupling point of the inner boom section to the mast to be such that the moment arm between the line of action of the actuator and the coupling point of the inner boom section to the mast does not decrease as the inner boom section moves between its fully lowered and raised positions.

In conclusion, it is believed that this application is in condition for allowance, and such allowance is respectfully requested.

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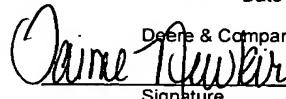
Respectfully,



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